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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,118	10/17/2003	Kenneth Douglas Vinson	9066M2	9231

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EXAMINER	
CORDRAY, DENNIS R	
ART UNIT	**PAPER NUMBER**
1731	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,118	VINSON, KENNETH DOUGLAS	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnholtz et al (WO 02/48458) in view of Anderson (3624019).

Barnholtz et al discloses an aqueous composition for softening an absorbent tissue (Abstract) comprising:

- A quaternary ammonium softening active ingredient (p 15, lines 24-25) that comprises at least 35% of the composition (p 53; claim 7);
- An electrolyte that can be present in an amount up to 25% of the composition (p 21, lines 14-15);
- A vehicle in which the softening active ingredient is dispersed, which vehicle can be water (p 20, lines 15, 23-24);
- A high molecular weight polymer, present in an amount between 0.01% and 5% of the composition (p 33, lines 16-20), which modifies the rheology of the aqueous composition (p 30, lines 10-12);
- Optionally, a plasticizer in an amount between 5% and 75% of the composition (col 19, lines 14-17);
- Optionally, a bilayer disruptor in an amount between 2% and 15% of the level of active ingredient (col 22, lines 27-28).

Softening agents can also include waxes, mineral oil, silicone oil, petrolatum, quaternary ammonium compounds with long alkyl chains, fatty acids, fatty alcohols and fatty esters, many of which would form oil-in-water emulsions (p 3, lines 6-13). The particularly preferred softening active ingredient is a mono or diester quaternary ammonium compound (p 16, line 24 to p 17, line 5) having the formula

$$(R_1)_{4-m} - N^+ - [(CH_2)_n - Y - R3]_m \quad X^-$$

wherein Y is -O-(O)C-, or -C(O)-O-, or -C(O)-O-, or -NH-C(O)-, or -C(O)-NH-;

m is 1 to 3 (mono-, di- or tri-ester);

n is 0 to 4;

each R1 is a C1-C6 alkyl or alkenyl group, hydroxyalkyl group, hydrocarbyl or substituted hydrocarbyl group, alkoxylated group, benzyl group, or mixtures thereof;

each R3 is a C13-C21 alkyl or alkenyl group, hydroxyalkyl poup, hydrocarbyl or substituted hydrocarbyl group, alkoxylated group, benzyl group, or mixtures thereof; and

X- is any softener-compatible anion.

Barnholtz et al discloses tissue paper (inherently one or more plies) made using the composition that contains approximately 47% water (which borders on and can overlaps the claimed amount of less than about 45% water) (pp 39-42, Example 1). Barnholtz also discloses applying the softening composition by a spray applicator (p 38, lines 5-6) and that the softening composition is deposited as uniform, discrete surface deposits, spaced apart at a frequency between 5 areas per lineal inch and 100 areas per lineal inch (p 51, claim 2).

Barnholtz et al does not disclose adding the high molecular weight polymer via a water-in-oil emulsion containing the high molecular weight polymer. Barnholtz et al also does not teach that the high molecular weight polymer is a cationic polymer.

Anderson et al discloses a a method for adding a high molecular weight polymer to a continuous aqueous phase as a water-in-oil emulsion (col 1, lines 33-42, col 2, lines 12-13). The emulsion can comprise 2-75% by weight of the polymer to be commercially practical (col 3, lines 36-40). The oil to water ratio in the emulsion be from 5:1 to 1:10 as a general rule (col 2, lines 65-67). Thus the water can be present in an amount from 9% to 89% of the emulsion and the oil can be present in an amount from 9% to 81% of the emulsion. The compositional range encompasses the claimed range. Anderson teaches that inversion of the water-in-oil emulsion in water causes the high molecular weight polymer to be rapidly dispersed into the water and overcomes the problem of needing lengthy agitation times to obtain complete dissolution of the polymer (col 1, lines 16-35). Anderson also teaches that the polymers exhibit superior thickening properties in aqueous solutions (i.e.-are rheology modifiers) and are used in papermaking processes (col 1, lines 4-9).

Anderson et al teaches that cationic, anionic or nonionic high molecular weight polymers can be rapidly dissolved into aqueous solution using a water-in-oil emulsion (col 2, lines 1-11) and that the invention is capable of rapidly providing aqueous dispersions having concentrations of 0.1 to 20% by weight of water soluble polymers, which significantly overlaps the claimed range (col 2, lines 27-30).

The art of Barnholtz et al, Anderson et al and the instant invention are analogous in that they pertain to aqueous solutions containing dispersed polymers used in papermaking processes and the problem of efficiently obtaining dissolution of a high molecular weight polymer into an aqueous solution.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a water-in-oil emulsion having the claimed composition to add the high molecular weight polymer to the softening composition of Barnholtz et al in view of Anderson et al in order to rapidly disperse the high molecular weight polymer in the aqueous solution. It would also have been obvious to one of ordinary skill in the art at the time of the invention to make the high molecular weight polymer cationic as a functionally equivalent option.

Response to Arguments

Applicant's arguments, see p 10, filed 1/18/2006, with respect to the rejection of Claims 1, 3, 6-9 and 14 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made under 35 U.S.C. 103(a).

Applicant's arguments filed 1/18/2006 with respect to the rejection of Claims 4, 5, 10-13 and 15-20 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

Applicant argues (see p 11) that Anderson only teaches the inversion of water-in-oil emulsion into water having no other components, except for a surfactant. Applicant

also argues that Anderson does not teach the inversion into a vehicle also containing a softening additive and an electrolyte. Applicant further argues that Anderson does not teach that the inversion would have some chance of success in a vehicle also containing a softening additive and an electrolyte.

Barnholtz et al discloses that the use of high molecular weight polymer in an aqueous vehicle containing a softening additive and an electrolyte results in favorable rheological properties as well as more favorable spray application to a tissue product (Abstract). Anderson teaches that dissolution of a high molecular weight water soluble polymer into water is a slow process because 1) the polymer is not readily dispersible in water and 2) the polymer has a tendency to agglomerate and be encapsulated by an outer coating of wet polymer that retards penetration of additional water into the agglomerate, leading to long agitation times to obtain complete dissolution (col 1, lines 17-30). Anderson discloses that inverting the polymer into the water via a water-in-oil emulsion results in rapid dissolution and dispersion of the polymer into the water (col 1, lines 33-42). Anderson also discloses that the invention is suitable for acrylamide polymers, poly vinyl alcohol, polyacrylic acid and other water soluble polymers (col 1, line 46 to col 2, line 11), which significantly overlap the species disclosed on pp 14-15 of the instant specification. Anderson further discloses that the water-in-oil emulsions are useful in papermaking operations, thus envisioning their use with all common papermaking additives, which include softening additives, quaternary ammonium compounds, and/or electrolytes. Anderson discloses that the oil can be mineral oil or petrolatum, which are also softening agents as disclosed by Barnholtz. The presence of

these oils was contemplated by Barnholtz, thus their use would not have a negative impact on the composition. Since Barnholtz et al discloses the advantages of using a high molecular weight polymer in a softening composition for tissues and since Anderson discloses a water-in-oil emulsion as an efficient mechanism for dispersing high molecular weight polymers in aqueous solutions, including those used in papermaking, it would be obvious, not only to use a water-in-oil emulsion to disperse the polymer of Barnholtz et al in view of Anderson but also to have a reasonable expectation of success.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRC

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